Abstract

A system and method is disclosed that provides a learning environment useful for teaching

5   students about the structure, characteristics, and behavior of a complex system. The learning experience is centered around a quantitative model-based simulation, whose state is updated according to defined algorithms with each successive execution of the model. The learning environment provides the student with user-friendly means for reviewing state information and choosing actions and/or "instrument" values. Several design strategies are combined and

10   implemented to manage the student's cognitive load and engender insights. The student may partially delegate control to automated agents, obtain qualitative descriptions of changes and of model entities, and access algorithmic details that explain causes and effects. The designer can vary simulation behaviors in different problem scenarios to achieve teaching objectives.